

U.S.S.N. 09/975,672
Filed: October 10, 2001
AMENDMENT &
RESPONSE TO OFFICE ACTION

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-25. (Canceled).

26. (Currently Amended) A system for the controlled release or exposure of reservoir contents comprising:

a microchip device comprising a substrate, a plurality of reservoirs in said substrate, reservoir contents in said reservoirs, and means for selectively controlling release or exposure of said reservoir contents; and

a telemetry system for the wireless transfer of data between the microchip device and a remote controller, wherein the telemetry system transmits data from the microchip device to the remote controller.

27. (Previously Presented) The system of claim 26, wherein the means comprises actuation electronics to selectively open the reservoirs.

28. (Original) The system of claim 27, wherein the actuation electronics comprises components selected from the group consisting of multiplexers, demultiplexers, signal generators, signal oscillators, amplifiers, switches, potentiostats, and combinations thereof.

29. (Original) The system of claim 28, further comprising a local controller for controlling the actuation electronics.

30. (Original) The system of claim 29, wherein the local controller comprises components selected from the group consisting of microprocessors, read only memory, random access

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memory, clocks, analog input/output devices, digital input/output devices, programmable logic circuits, and combinations thereof.

31. (Original) The system of claim 30, wherein the local controller can wirelessly communicate with the remote controller of the telemetry system.
32. (Original) The system of claim 31, wherein the data transfer is accomplished using a first coil in the microchip device to inductively couple electromagnetic energy to a corresponding coil in the remote controller.
33. (Original) The system of claim 26, wherein the microchip device comprises a receiver which comprises a component selected from the group consisting of photocells, photodiodes, phototransistors, and ultrasonic receivers.
34. (Original) The system of claim 26, wherein the remote controller comprises a light-emitting diode, a laser, or an ultrasonic transmitter.
35. (Previously Presented) The system of claim 26, wherein the reservoir contents comprise a drug.
36. (Original) The system of claim 26, wherein each reservoir has a reservoir cap positioned on the reservoir over the reservoir contents, and wherein release or exposure of the reservoir contents is controlled by diffusion through or disintegration of the reservoir cap.
37. (Original) The system of claim 36, wherein the microchip device further comprises a cathode, wherein at least one reservoir cap is an anode, and an electric potential is applied between the cathode and anode to oxidize the reservoir cap and expose the reservoir contents to a surrounding fluid.
38. (Original) The system of claim 35, wherein the microchip device is adapted for implantation onto or in the eye of a human or animal, and wherein the remote controller comprises an ophthalmic laser.

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39. (Original) The system of claim 35, wherein the microchip device is adapted for administration *in vivo*, and wherein the remote controller comprises a radio frequency transmitter.

40-42. (Canceled).

43. (Original) The system of claim 26, further comprising a rechargeable or on-demand power source which comprises a local component which can wirelessly receive power from a remote transmitter.

44-51. (Canceled).

52. (Previously Presented) The system of claim 26, wherein the microchip device is adapted for implantation into a patient and wherein the reservoir contents comprises an immobilized enzyme which reacts with a biological molecule.

53-55. (Canceled).

56. (Currently Amended) A system for the controlled release or exposure of reservoir contents comprising:

an implantable medical device comprising a substrate, a plurality of reservoirs containing reservoir contents for release or exposure, reservoir caps positioned on the reservoir over the reservoir contents, wherein release or exposure of the reservoir contents in each reservoir is controlled by disintegration of the reservoir cap thereover; and

a telemetry system for the wireless transfer of data between the medical device and a remote controller, wherein the telemetry system transmits data from the implantable medical device to the remote controller.

57. (Previously Presented) The system of claim 56, wherein the reservoir contents comprises a therapeutic or prophylactic agent.

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58. (Previously Presented) The system of claim 56, wherein the reservoir contents comprises an immobilized enzyme.

59. (Previously Presented) The system of claim 56, wherein the reservoir cap consists essentially of a metal film.

60. (Previously Presented) The system of claim 56, wherein the implantable medical device further comprises a power source and actuation electronics to control and direct power to selectively open each reservoir.

61. (Currently Amended) The system of claim 60, wherein the substrate comprises silicon; and the reservoir cap comprises a metal film; and the telemetry system transmits data from the implantable medical device to the remote controller.